



# *MI FluFocus*

## **Influenza Surveillance and Avian Influenza Update**

**Bureau of Epidemiology  
Bureau of Laboratories**



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### ***New updates in this issue:***

- **Michigan:** Updated MDCH influenza reporting and testing guidance is now available.
  - **National:** Study shows an influenza vaccine challenge may allow vaccination of those with egg allergies.
  - **International:** 2009 H1N1 is currently most active in tropical zones of Asia, the Americas, and Africa.
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### ***\*\*\*2009 Influenza A (H1N1) virus Updates\*\*\****

On April 2, MDCH updated guidance for healthcare providers, local health departments and laboratories regarding influenza surveillance, reporting and testing for the upcoming summer and fall. These documents are now available at the websites listed below.

Please continue to reference the MDCH influenza website at [www.michigan.gov/flu](http://www.michigan.gov/flu) for additional 2009 H1N1 information. Local health departments can find guidance documents in the MI-HAN document library. In addition, additional laboratory-specific information is located at the Bureau of Laboratories H1N1 page at [http://www.michigan.gov/mdch/0,1607,7-132-2945\\_5103-213906--,00.html](http://www.michigan.gov/mdch/0,1607,7-132-2945_5103-213906--,00.html).

### ***\*\*\*Influenza Surveillance Reports\*\*\****

**Michigan Disease Surveillance System:** MDSS data for the week ending April 3<sup>rd</sup> showed a slight decrease in reported cases of aggregate influenza, individual influenza, and 2009 novel influenza. All influenza categories were lower than levels during the same time period one year ago.

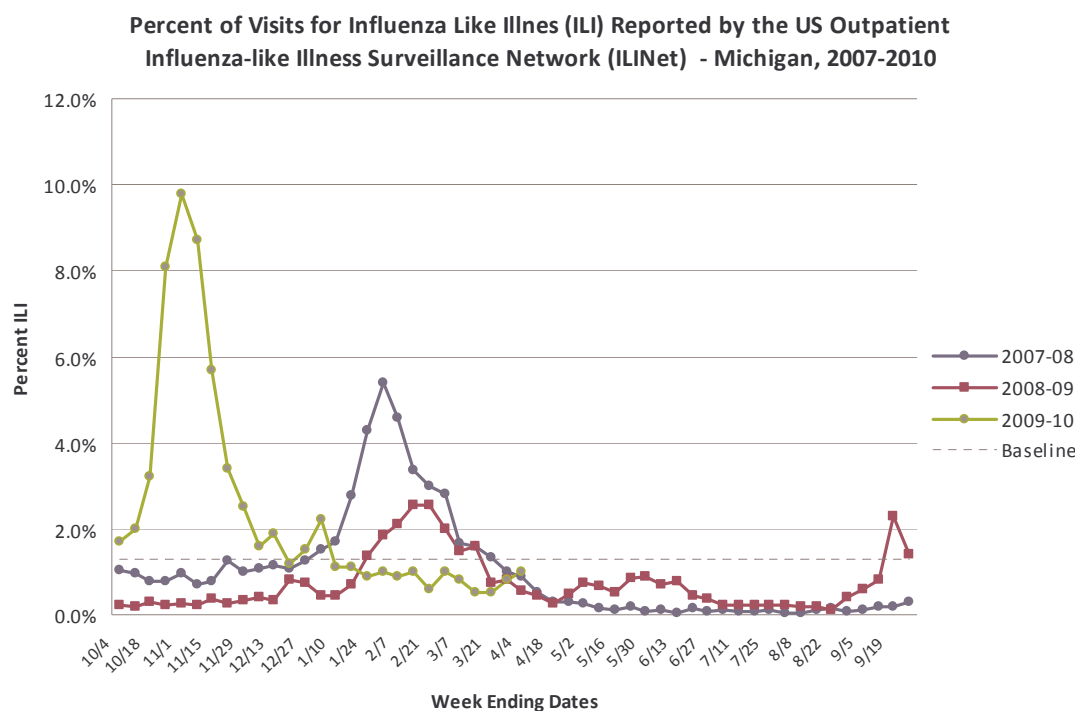
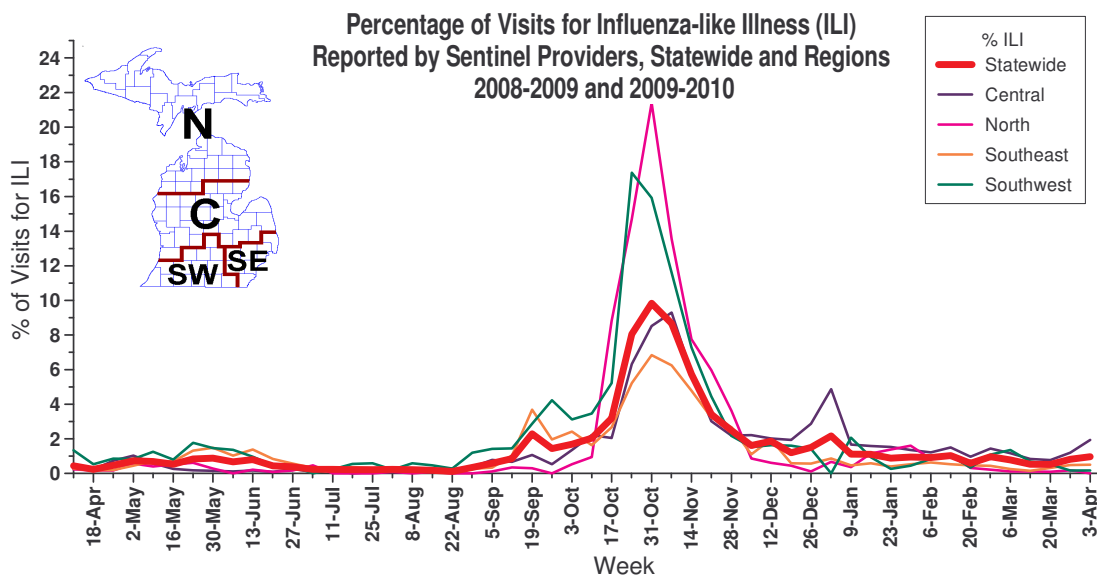
During March 28 - April 3, 2010, 5686 cases of flu-like illness and confirmed and probable cases of seasonal and novel influenza were reported in Michigan. 2129 hospitalizations and 78 deaths associated with influenza have been reported since September 1, 2009. This report is updated every Tuesday by 5:00 pm and is accessible at "Current H1N1 Activity" on the website <http://www.michigan.gov/h1n1flu>.

**Emergency Department Surveillance:** Emergency department visits from constitutional complaints increased slightly, while respiratory complaints decreased slightly, from levels seen during the previous week. Constitutional complaints were slightly lower compared to the same reporting period last year, and respiratory complaints were slightly higher. In the past week, there were ten constitutional alerts in the C(7), N(2), and SE(1) Influenza Surveillance Regions and one respiratory alert in the C(1) Influenza Surveillance Region.

**Over-the-Counter Product Surveillance:** Chest rubs, pediatric electrolytes, and thermometers increased slightly at the end of the previous week and then trended downward through the week's end. Cough/cold medications increased slightly compared to the previous week. All indicators, with the exception of a slight increase in chest rub sales, are consistent with levels seen during this time last year.

**Sentinel Provider Surveillance (as of April 8):** During the week ending April 3, 2010, the proportion of visits due to influenza-like illness (ILI) slightly increased to 1.0% overall. However, activity continued to remain below baseline levels (1.3%); 59 patient visits due to ILI were reported out of 6,107 office visits. Twenty-nine sentinel sites provided data for this report. Activity increased in one surveillance region: Central (1.9%); remained the same in two regions: Southwest (0.2%) and Southeast (0.5%) and decreased in the remaining surveillance region: North (0.0%). Please note that these rates may change as additional reports are received.

As part of pandemic influenza surveillance, CDC and MDCH highly encourage year-round participation from all sentinel providers. New practices are encouraged to join the sentinel surveillance program today! Contact Cristi Carlton at 517-335-9104 or CarltonC2@michigan.gov for more information.



**Laboratory Surveillance (as of April 3):** During March 28 - April 3, MDCH Bureau of Laboratories identified one influenza isolates. For the 2009-2010 season (starting on October 4, 2009), MDCH BOL has identified 610 influenza isolates:

- 2009 Influenza A (H1N1): 609
- Influenza B: 1

Nine sentinel labs reported for the week ending April 3, 2010. 3 labs reported sporadic influenza A activity (SE, C); all others reported zero influenza A positives (SE, SW, C, N). No labs reported influenza B positives. Four labs reported sporadic RSV positives (SE, SW, C).

**Michigan Influenza Antigenic Characterization (as of April 8):** One 2009 H1N1 influenza A virus from Michigan has undergone further characterization at the CDC. This virus was characterized as A/California/07/2009 (H1N1)-like, which is the recommended strain for the H1 component of the 2010-11 Northern Hemisphere vaccine.

**Michigan Influenza Antiviral Resistance Data (as of April 8):** Results are currently not available for antiviral resistance at CDC for the 2009-2010 season.

Antiviral resistance testing takes months to complete and cannot be used to guide individual patient treatment. However, CDC has made recommendations regarding the use of antivirals for treatment and prophylaxis of influenza. The guidance is available at <http://www.cdc.gov/H1N1flu/recommendations.htm>.

**Influenza-Associated Pediatric Mortality (as of April 8):** Five 2009 H1N1 influenza-associated pediatric mortalities (SE(3), SW, N) have been reported to MDCH for the 2009-2010 influenza season.

\*\*\*CDC has asked states for information on any pediatric death associated with influenza. This includes not only any pediatric death (<18 years) resulting from a compatible illness with laboratory confirmation of influenza, but also any unexplained pediatric death with evidence of an infectious process. Please immediately call MDCH to ensure proper specimens are obtained. View the complete MDCH protocol online at [http://www.michigan.gov/documents/mdch/ME\\_pediatric\\_influenza\\_guidance\\_v2\\_214270\\_7.pdf](http://www.michigan.gov/documents/mdch/ME_pediatric_influenza_guidance_v2_214270_7.pdf).

**Influenza Congregate Settings Outbreaks (as of April 8):** Seven congregate setting outbreaks with confirmatory novel influenza A H1N1 testing (2SE, 3 SW, 1C, 1N), and two outbreaks associated with positive influenza A tests (1C, 1N) have been reported to MDCH for the 2009-2010 influenza season. These are 8 school facilities and 1 long term care facility. Human metapneumovirus was confirmed in one outbreak in a long term care facility (SW) in February.

During fall 2009, 567 influenza-related school and/or district closures in Michigan (Public Health Preparedness Region 1 - 55, Region 2N - 4, Region 2S - 8, Region 3 - 54, Region 5 - 153, Region 6 - 100, Region 7 - 109, Region 8 - 84) were reported.

**National (CDC [edited], April 2):** During week 12 (March 20-27, 2010), influenza activity remained at approximately the same levels as last week in the U.S. 97 (3.5%) specimens tested by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories and reported to CDC/Influenza Division were positive for influenza. Approximately 98% of all subtyped influenza A viruses reported to CDC were 2009 influenza A (H1N1) viruses. The proportion of deaths attributed to pneumonia and influenza (P&I) was slightly above the epidemic threshold. One influenza-associated pediatric death was reported and was associated with 2009 influenza A (H1N1) virus infection. The proportion of outpatient visits for influenza-like illness (ILI) was 1.6%, which is below the national baseline of 2.3%. One of 10 regions (Region 9) reported ILI above its regionspecific baseline. No states reported widespread influenza activity. Three states reported regional influenza activity. Puerto Rico and seven states reported local influenza activity. The District of Columbia, Guam and 30 states reported sporadic influenza activity. Ten states reported no influenza activity, and the U.S. Virgin Islands did not report.

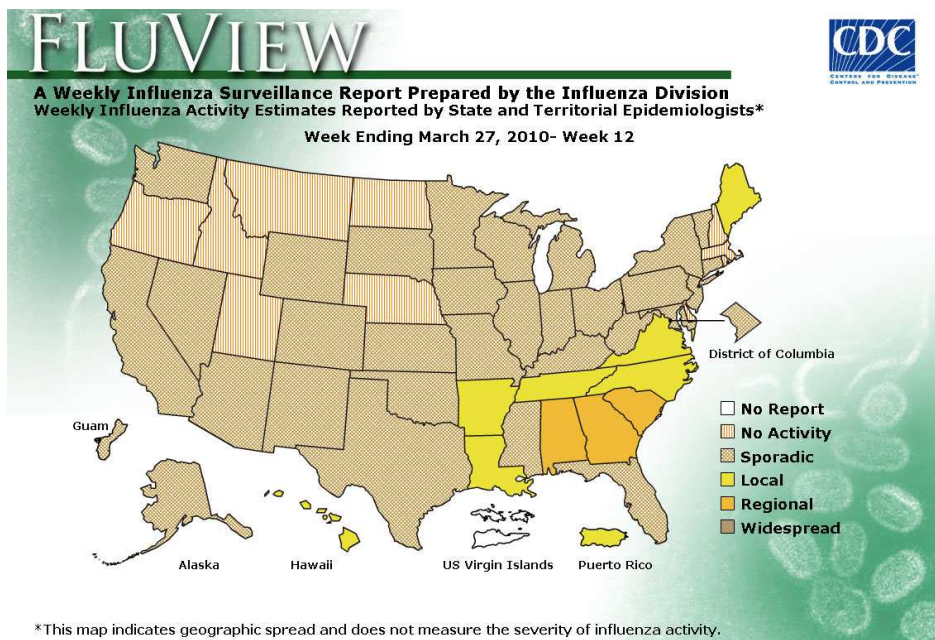
CDC has antigenically characterized two seasonal influenza A (H1N1), 13 influenza A (H3N2), 23 influenza B, and 1,609 2009 influenza A (H1N1) viruses collected since September 1, 2009.

Both seasonal influenza A (H1N1) viruses tested were related to the influenza A (H1N1) component of the 2009-10 Northern Hemisphere influenza vaccine (A/Brisbane/59/2007). The 13 influenza A (H3N2) viruses tested showed reduced titers with antisera produced against A/Brisbane/10/2007, the 2009-2010 Northern Hemisphere influenza A (H3N2) vaccine component, and were antigenically related to A/Perth/16/2009, the WHO recommended influenza A (H3N2) component of the 2010 Southern Hemisphere and 2010-11 Northern Hemisphere vaccine formulations.

Influenza B viruses currently circulating globally can be divided into two distinct lineages represented by the B/Yamagata/16/88 and B/Victoria/02/87 viruses. The influenza B component of the 2009-10 and 2010-11 Northern Hemisphere vaccines belongs to the B/Victoria lineage. The 23 influenza B viruses tested belong to the B/Victoria lineage and are related to the influenza vaccine component for the 2009-10 and 2010-11 Northern Hemisphere influenza B vaccine strain (B/Brisbane/60/2008).

One thousand six hundred four (99.7%) of 1,609 2009 influenza A (H1N1) viruses tested are related to the A/California/07/2009 (H1N1) reference virus selected by WHO as the 2009 H1N1 vaccine virus, and as a component in the 2010-11 Northern Hemisphere vaccine. Five viruses (0.3%) tested showed reduced titers with antiserum produced against A/California/07/2009.

To access the entire CDC weekly surveillance report, visit <http://www.cdc.gov/flu/weekly/fluactivity.htm>



From <http://www.cdc.gov/h1n1flu/updates/us/#totalcases>:

*U.S. Influenza and Pneumonia-Associated Hospitalizations and Deaths from Aug 30, 2009–Mar 27, 2010*

Cases Defined by Influenza Laboratory-Tests**	Hospitalizations 41,689	Deaths 2,096
<p>**States report weekly to CDC either 1) laboratory-confirmed influenza hospitalizations and deaths or 2) pneumonia and influenza syndrome-based cases of hospitalization and death resulting from all types or subtypes of influenza. Although only the laboratory confirmed cases are included in this report, CDC continues to analyze data both from laboratory confirmed and syndromic hospitalizations and deaths.</p>		

**International (WHO pandemic update 94 [edited], April 1):** The most active areas of pandemic influenza virus transmission currently are in parts of the tropical zones of Asia, the Americas, and Africa. Pandemic influenza activity remains low in much of the temperate areas of both the northern and southern hemispheres. Although pandemic influenza virus continues to be the predominant influenza virus circulating worldwide, seasonal influenza type B viruses are predominant in much of East Asia, and have been increasingly detected at low levels across southeast and western Asia, East Africa, and in parts of eastern and northern Europe. Seasonal influenza A (H3N2) is still being detected in very small numbers in parts of Asia and Australia.

In Southeast Asia, pandemic influenza virus transmission remains active but variable across the region. Thailand continues to report the most active circulation of pandemic virus in the region, however, disease activity may have recently peaked and begun to decline. Approximately half of all provinces in Thailand reported that >10% outpatient visits were due to influenza like illness (ILI). The proportion of outpatient sentinel respiratory samples testing positive for influenza dropped to 10% after peaking at approximately 30% during mid February 2010. In Malaysia, limited data suggest pandemic influenza virus transmission persists as new cases continue to be reported. In Indonesia, no recent pandemic influenza activity has been reported, however, low levels of seasonal influenza H3N2 and type B viruses continue to be detected. In Myanmar, limited data suggest that pandemic influenza has declined substantially since a period of active transmission during February 2010.

In South Asia, overall pandemic influenza activity remains low, except in Bangladesh, which reported regional spread of pandemic influenza virus in association with an increase in new cases since late February 2010. In India, low level circulation of pandemic influenza virus persists in the western part of the country.

In East Asia, overall pandemic influenza activity remained low as circulation of seasonal influenza B viruses continued to increase across the region. In China, ILI activity has greatly decreased; however, approximately 20-30% of respiratory samples have tested positive for influenza in recent weeks. Of these, over 85% were seasonal influenza B viruses. In Mongolia, recent intense influenza activity due to seasonal influenza B viruses continues to decrease. Overall rates of ILI have returned to near baseline in both Japan and the Republic of Korea as pandemic influenza virus circulation continues to wane. Seasonal influenza B viruses are circulating at low level across other parts of East and Southeast Asia



and Oceania (Hong Kong SAR (China), Japan, Republic of Korea, China Taipei, Philippine, Thailand, Vietnam, Indonesia, Bangladesh and Australia). Also, small numbers of seasonal influenza H3N2 viruses have been detected in several countries of East and Southeast Asia as well as Oceania, particularly in Indonesia and in Australia.

In North Africa and Western Asia, limited data suggests that pandemic influenza virus continues to circulate at low levels, as overall disease activity remained low across much of the region. In Iran, no pandemic influenza viruses have been detected recently, however, low levels of seasonal influenza B viruses continue to be detected. In Sub-Saharan Africa, limited data suggests that pandemic influenza virus transmission remains variable but most active in western Africa and in limited areas of eastern Africa. Localized areas of active pandemic influenza transmission persist in areas of Eastern Africa, particularly Rwanda and Tanzania. Pandemic influenza virus continues to be the predominant influenza virus circulating in West and East Africa, however, small numbers of seasonal influenza H3N2, H1N1, and seasonal influenza B viruses have also been identified.

In tropical zone of the Americas, limited data suggests that overall influenza activity remains low but variable with localized areas of active transmission in a number of countries. Guatemala, Nicaragua, El Salvador, Panama, Brazil, Peru, and Bolivia, all reported an increasing trend of respiratory diseases associated with circulation of pandemic influenza virus for at least one week during March 2010. Localized increases in pandemic influenza activity have been associated with school outbreaks in several countries; however, in some places disease activity may be partially accounted for by co-circulation of other respiratory viruses. The most active area of pandemic influenza virus circulation in the region appears to be in Brazil where disease activity in the northern region has been associated with pandemic influenza virus transmission. In Mexico, limited data suggests that localized active transmission of pandemic influenza virus continued to occur in several states throughout March 2010, although overall influenza activity did not increase to peak levels observed during fall influenza season.

In the northern and the southern temperate zones of the Americas, overall pandemic influenza transmission remained low as influenza virus continues to circulate at low levels. Although the national level of ILI activity remained below the seasonal baseline in the United States, three of ten subregions reported a resurgence of ILI activity above their respective baselines. The most active areas of pandemic influenza transmission currently appears to be in the southeastern United States, particularly in the states of Alabama, Georgia, and South Carolina, all of which reported regional spread of influenza activity. A corresponding increase in confirmed severe cases of pandemic H1N1 has also been noted in the southeastern United States in recent weeks. In Canada, overall ILI activity remained below the seasonal baseline. In temperate countries of the southern hemisphere, overall influenza activity remained low, with sporadic detections of pandemic and seasonal influenza viruses.

In Europe, low levels of pandemic influenza virus continue to circulate across the region, particularly across southern and eastern Europe. The proportion of sentinel respiratory samples testing positive for influenza remained low (4.6%). Three countries (Latvia, Lithuania and Bulgaria) reported an increasing trend of respiratory disease activity, however, these trends have not been associated with increased detections of pandemic influenza virus. Increased circulation of seasonal influenza B virus has been observed in the Siberian and far eastern regions of the Russian Federation, and in Italy and Sweden, where it continues to be the predominant circulating virus (although at overall low levels).

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MDCH reported **SPORADIC INFLUENZA ACTIVITY** to the CDC for the week ending April 3, 2010.

For those interested in additional influenza vaccination and education information, the MDCH *FluBytes* is available at [http://www.michigan.gov/mdch/0,1607,7-132-2940\\_2955\\_22779\\_40563-125027--,00.html](http://www.michigan.gov/mdch/0,1607,7-132-2940_2955_22779_40563-125027--,00.html).

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### ***Novel Influenza Activity and Other News***

**WHO Pandemic Phase:** Phase 6 – characterized by increased and sustained transmission in the general population. Human to human transmission of an animal or human-animal influenza reassortant virus has caused sustained community level outbreaks in at least two WHO regions.

**National, Vaccine (Reuters [edited], April 5):** The flu shot is safe for most kids with egg allergies, a new report in Pediatrics shows. Because all flu vaccine is made in chicken eggs, there are concerns about giving the flu shot to kids with egg allergies. About one in 60 U.S. children has such allergies, according to the American College of Allergy, Asthma, and Immunology.

But today's influenza vaccines contain only miniscule amounts of egg protein, notes Dr. Lynda Schneider of Children's Hospital in Boston, one of the new study's authors. "You're talking about a very small amount, I'd say on the order of a millionth of an egg, in the current vaccines."

Typically, doctors use a skin test to tell whether children with egg allergies are allergic to the flu vaccine. However, Schneider said she and her colleagues had found the test wasn't very helpful in gauging a child's risk of having a severe reaction, so they stopped doing it. Instead, they give children allergic to eggs a tenth of the vaccine, and then the remainder if he or she does not have a severe reaction.

In the current study, Schneider and her team report on 171 children who had received the flu vaccine in their practice, before and after the skin test was dropped. Among the 56 children who had a skin test before vaccination, 95 percent tolerated the vaccine with no severe reaction, as did 97 percent of the children who didn't have the skin test beforehand. A few patients had mild reactions such as itchiness, hives, or wheezing, but none of the reactions required treatment with epinephrine, which people with allergies often carry in an autoinjector known as an EpiPen.

The researchers did not include any children in the study who'd suffered recent serious allergic reactions to eggs, such as anaphylaxis, Schneider noted. Anaphylaxis is a severe allergic reaction that develops quickly, within seconds or minutes of exposure, causing potentially life-threatening symptoms like difficulty breathing.

Parents of children with egg allergies should know that their children can receive the vaccine, the researcher said, and should discuss it with their physicians. While more research is needed to figure out the best way to go about giving the shot to kids with egg allergies, she added, the new findings suggest "that you can maybe skip the testing."

The Centers for Disease Control and Prevention recommend that everyone between six months and 18 years of age get the flu shot. This protection can be particularly important for kids with asthma, who are at higher risk of flu complications; these children are also often allergic to eggs, Schneider noted.

Because it's more complicated for them to get flu shots, Schneider noted, egg-allergic kids are probably less likely than non-allergic kids to be immunized. "We hope that by making things easier we can get more of those egg-allergic kids immunized."

**International, Wild Birds (OIE [edited], April 7):** Country: Hong Kong (P.R. China)

Disease: Highly pathogenic avian influenza virus Serotype(s) H5N1

Date of first confirmation of the event: 29/03/2010; Date of Start of Event: 26/03/2010

Date of report: 07/04/2010; Date Submitted To OIE: 08/04/2010

Province: HONG KONG; District: Yuen Long; Location: Mai Po San Tsuen

Species: Wild species; Cases: 1; Deaths: 1; Destroyed: 0; Slaughtered: 0

Affected Population: A barn swallow (*Hirundo rustica*) carcass was collected on 26 March 2010 at the Mai Po Section of Castle Peak Road, Yuen Long, New Territories, Hong Kong. Barn swallows usually visit Hong Kong in spring and summer.

Epidemiology: An intensive surveillance system is in place for all poultry farms, poultry markets, pet bird shops and wild birds in Hong Kong. This H5N1 infected wild bird was detected in the frame of the ongoing surveillance program on wild birds. No spread of disease was evident. As a precautionary measure, the Mai Po Nature Reserve has been temporarily closed to visitors for 21 days starting from 31 March 2010.

Control Measures Applied: Screening, Disinfection of infected premises/establishment(s)

**Michigan Wild Bird Surveillance (USDA, as of April 8):** For the 2009 testing season (April 1, 2009-March 31, 2010), HPAI subtype H5N1 has not been recovered from any of the 111 Michigan samples tested to date, including 58 live wild birds, 39 hunter-killed birds and 14 morbidity/mortality specimens. H5N1 HPAI has not been recovered from 19,322 samples tested nationwide. For more information, visit the National HPAI Early Detection Data System at <http://wildlifedisease.nbio.gov/ai/>.

To learn about avian influenza surveillance in Michigan wild birds or to report dead waterfowl, go to Michigan's Emerging Disease website at <http://www.michigan.gov/emergingdiseases>.

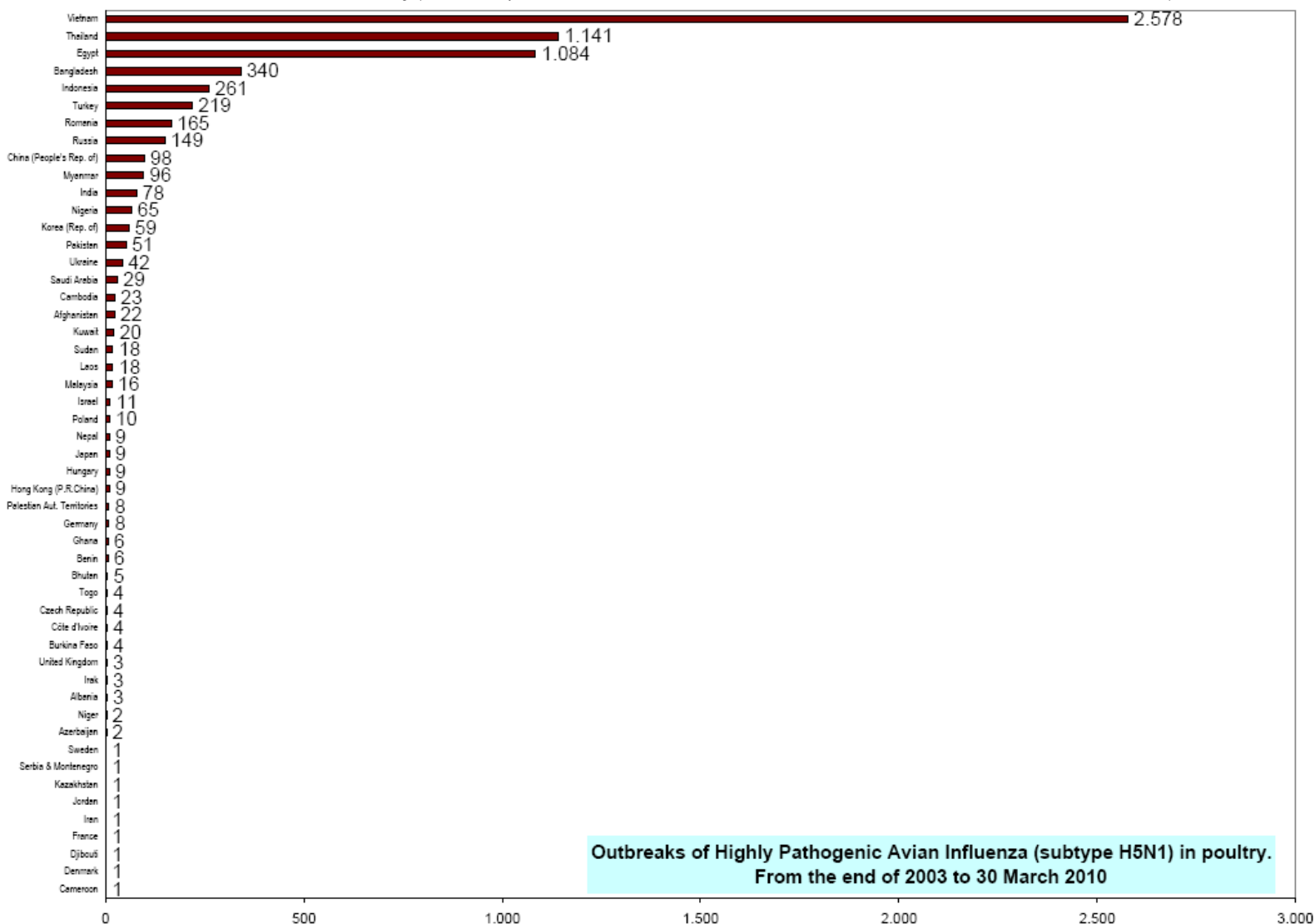
**Please contact Susan Peters at [PetersS1@Michigan.gov](mailto:PetersS1@Michigan.gov) with any questions regarding this newsletter or to be added to the weekly electronic mailing list.**

**Contributors**

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**Table 1. H5N1 Influenza in Poultry** (Source: [http://www.oie.int/downld/AVIAN%20INFLUENZA/A\\_AI-Asia.htm](http://www.oie.int/downld/AVIAN%20INFLUENZA/A_AI-Asia.htm) Downloaded 3/31/10)



**Outbreaks of Highly Pathogenic Avian Influenza (subtype H5N1) in poultry.  
From the end of 2003 to 30 March 2010**

**Table 2. H5N1 Influenza in Humans - Cases up to March 30, 2010.** [http://www.who.int/csr/disease/avian\\_influenza/country/cases\\_table\\_2010\\_03\\_30/en/index.html](http://www.who.int/csr/disease/avian_influenza/country/cases_table_2010_03_30/en/index.html). Downloaded 3/30/2010. Cumulative number of lab-confirmed cases reported to WHO. Total cases includes deaths.

Country	2003		2004		2005		2006		2007		2008		2009		2010		Total	
	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	1	0	0	0	9	7
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	0	0	38	25
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	39	4	18	6	108	33
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	21	19	1	1	163	135
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	3	2
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	5	5	5	2	117	59
Total	4	4	46	32	98	43	115	79	88	59	44	33	73	32	24	9	492	291